

## The Italian Spine Youth Quality of Life questionnaire measures health-related quality of life of adolescents with spinal deformities better than the reference standard, the Scoliosis Research Society 22 questionnaire.

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### Abstract

**OBJECTIVE:** To compare the validity of the Italian Spine Youth Quality of Life (ISYQOL) questionnaire with that of the Scoliosis Research Society 22 (SRS22) questionnaire, the criterion standard for health-related quality of life (HRQOL) measurement in adolescents with spinal deformities.

**DESIGN:** Cross-sectional study.

**SETTING:** Outpatient clinic.

**SUBJECTS:** Consecutive adolescents (10-18 years; 541 wearing brace) affected by idiopathic scoliosis (642 females, 100 males) or hyperkyphosis (87 females, 109 males).

**INTERVENTIONS:** NA.

**MAIN MEASURES:** The Spearman's correlation coefficient ( $\rho$ ) between ISYQOL and SRS22 was used to assess ISYQOL concurrent validity. Sex, age, severity, bracing, trunk appearance and deformity type were assessed for known-groups validity. Cohen's  $d$  quantified between-groups differences. Multiple linear regression exploring the effect of sex, age, body mass index (BMI), severity, bone age, trunk appearance, physiotherapy, bracing and sport on HRQOL of scoliosis patients was used to assess concurrent validity further.

**RESULTS:** Satisfactory correlations were found between ISYQOL and SRS22 (scoliosis,  $\rho = 0.71$ ; kyphosis,  $\rho = 0.56$ ). Known-groups validity analysis showed that ISYQOL detects all the between-groups differences detected by SRS22 and a males-females difference undetected by SRS22. ISYQOL Cohen's  $d$  was larger than SRS22 Cohen's  $d$  in three between-groups comparisons and similar in the others. Brace, sport and scoliosis severity were independently related to ISYQOL (linear regression:  $R^2 = 0.23$ ;  $p < 0.001$ ). Brace, sport and physiotherapy were related to SRS22 ( $R^2 = 0.17$ ).

**CONCLUSIONS:** ISYQOL showed high validity when used to measure HRQOL in adolescents with spinal deformities. Moreover, ISYQOL performs better than SRS22, having better known-groups validity and (contrary to SRS22) detecting the impact of disease severity on HRQOL.

**KEYWORDS:** Quality of life; brace; psychometrics; scoliosis; surveys and questionnaires

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